

Art Unit: Unknown

Examiner: Unknown

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

AGA et al.

Application No.: Unknown

Filed:

April 20, 2001

For:

EPOXY RESIN COMPOSITION, SEMICONDUCTOR DEVICE, AND METHOD OF JUDGING

VISIBILITY OF LASER MARK

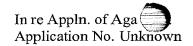
SPECIFICATION, CLAIMS AND ABSTRACT AS PRELIMINARILY AMENDED

Amendments to the paragraph beginning at page 1, line 6:

The present invention generally relates to an epoxy resin composition for sealing a semiconductor device, and more specifically to a semiconductor sealing epoxy resin composition being providing excellent—in visibility of a laser mark and—in having excellent fluidity characteristics. The present invention also relates to a semiconductor device that uses such a semiconductor sealing epoxy resin composition. The present invention further relates to a method of judging the visibility of a laser mark.

Amendments to the paragraph beginning at page 1, line 28:

However, such a marking and its curing require a lot of time, and also it is not easy to handle with the ink, so that there is an increasing number of manufacturers that adopt have adopted a laser mark 6.





Amendments to the paragraph beginning at page 2, line 3:

Further, although there has have been some reports on improvement in the visibility of a laser mark, they are not shown in reported as quantitative values, and it is not clear whether they are good or poor.

Amendments to existing claims:

- 1. (Amended) An epoxy resin composition that seals a semiconductor chip, wherein a color difference between a color of said epoxy resin and a color of a standard substance stored in a colorimeter-shows has a value of at least 30-or more.
- 2. (Amended) An epoxy resin composition that seals a semiconductor chip, said epoxy resin composition including an epoxy resin and a filler that fills—an inside of said epoxy resin, wherein said filler contains from 10 to 15 wt%, with respect to total filler, of a filler component having an average particle size of no more than 10 µm—or-less with respect to total filler components.
 - 3. (Amended) A semiconductor device including:
 - a semiconductor chip;
- a package formed of an epoxy resin-that scals encapsulating said semiconductor chip; and
- a laser mark printed on a surface of said package, wherein a color difference between a color of said laser mark and a color of the surface of said package where the laser mark is not-formed present, as measured by-means of a colorimeter,-shows has a value of at least 10-or more.
 - 5. (Amended) A semiconductor device including:
 - a semiconductor chip;
- a package-formed of an epoxy resin-that seals encapsulating said semiconductor chip; and

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a laser mark printed on a surface of said package, wherein a color difference between a color of said epoxy resin and a color of a standard substance stored in a colorimeter—shows has a value of at least 30-or more.

- 6. (Amended) A semiconductor device including:
- a semiconductor chip;
- a package-formed of an epoxy resin-that-seals encapsulating said semiconductor chip; and
- a filler that fills—an inside of said epoxy resin, wherein said filler contains from 10 to 15 wt%, with respect to total filler, of a filler component having an average particle size of no more than 10 µm—or less with respect to total filler components.
- 7. (Amended) A method of judging—a visibility of a laser mark printed on a surface of a package—in of a semiconductor device—sealed with, the package—formed of being an epoxy resin, said method including—the steps of:

measuring a color difference value between a color of said the laser mark and a color of the surface of said package where the laser mark is not formed present, by means of with a colorimeter; and

judging whether-said the color difference value-shows a value of is at least 10-or more.

Amendments to the abstract:

ABSTRACT OF THE DISCLOSURE

A-principal object is to provide a semiconductor device that uses a semiconductor sealing epoxy resin composition—being excellent in visibility—of a for laser—mark marking and in fluidity characteristics. A semiconductor chip is sealed with a package—formed of an epoxy resin. A laser mark is printed on a surface of the package. The color difference between the color of the laser mark and the color of the surface of the package where the laser mark is not—formed present, as measured by—means—of a colorimeter,—shows has a value of at least 10 or more.